SANYO

Colour Television

Service Manual

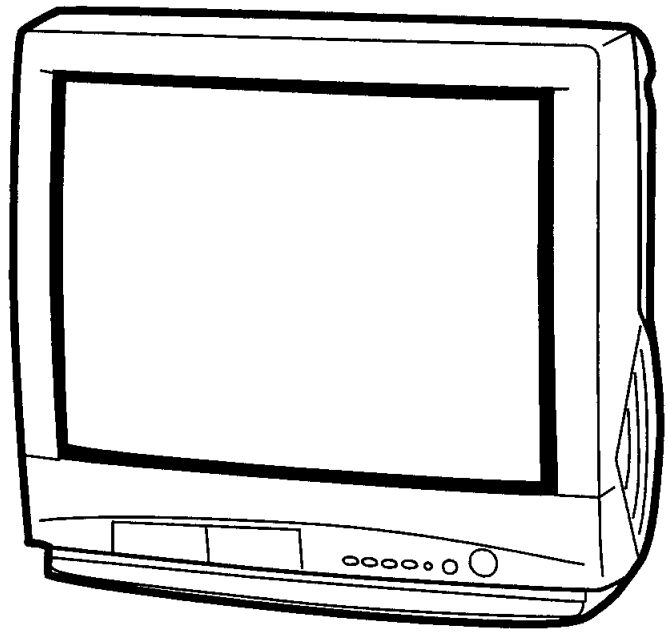
21MT2

Model: C21ES35B (U.K)

Ser Ref No. C21ES35B-01

Product Code: 1113 34002
Chassis: EC5-A

Original Manual



Give complete "SERVICE REF. NO." for parts order or servicing, it is shown on the rating sheet on the cabinet back of the TV set.

Note
This TV receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specifications for the design specifications

SPECIFICATIONS

Power Source	AC220~240V 50Hz
Television System	System I
Colour System	PAL
Receiving Channels	UHF : 21~69
Aerial input impedance	75ohm
AV Terminal	21 pin SCART (AV1)
Speaker	8ohm, 8 x 8 cm
Sound output	2W (cont.)
Picture tube	55 cm diagonal, 90°
Visible picture	51 cm (diagonal)
Dimensions (W x H xD)	521 x 465 x 481 mm
Weight	21 kg

CONTENTS

Page

Safety precautions 2
Block diagram
  Main signal routing 3
  Power signal routing 4
Circuit description .....5~6
Service control adjustments.....7~8
Circuit alignment 9
Memory IC replacement 10
Special functions.....11
Cabinet parts list.....12
Chassis electricl parts list .....13~19
Schematic Diagram .....loose

Part No. SKSM0177 F2TCV

SAFETY PRECAUTION

1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.
3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

X-RADIATION PRECAUTION

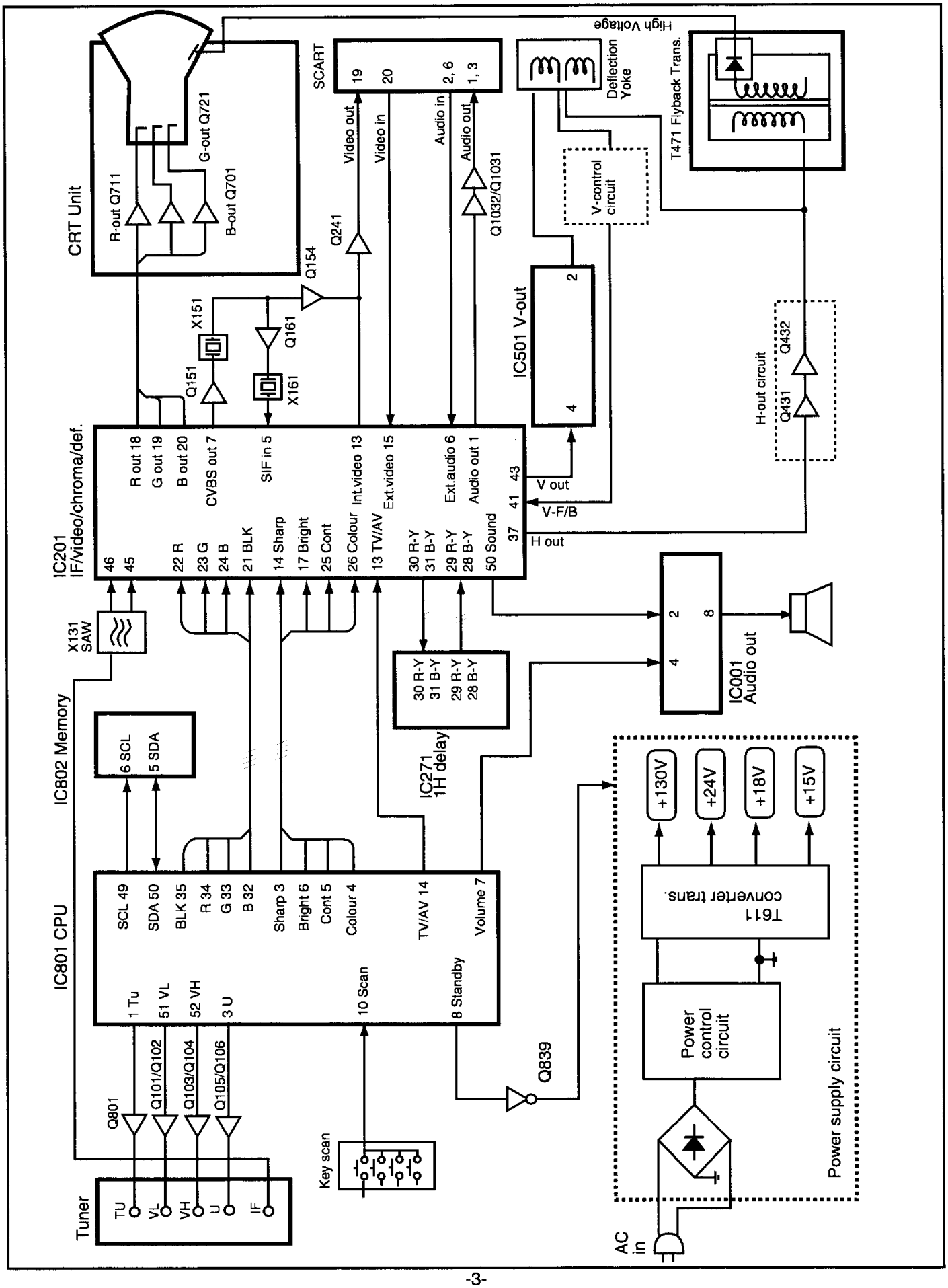
The primary source of X-RADIATION in the television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for +B1 volt power supply adjustment, and high voltage adjustment to maintain the high voltage within the specified limits.

PRODUCT SAFETY NOTICE

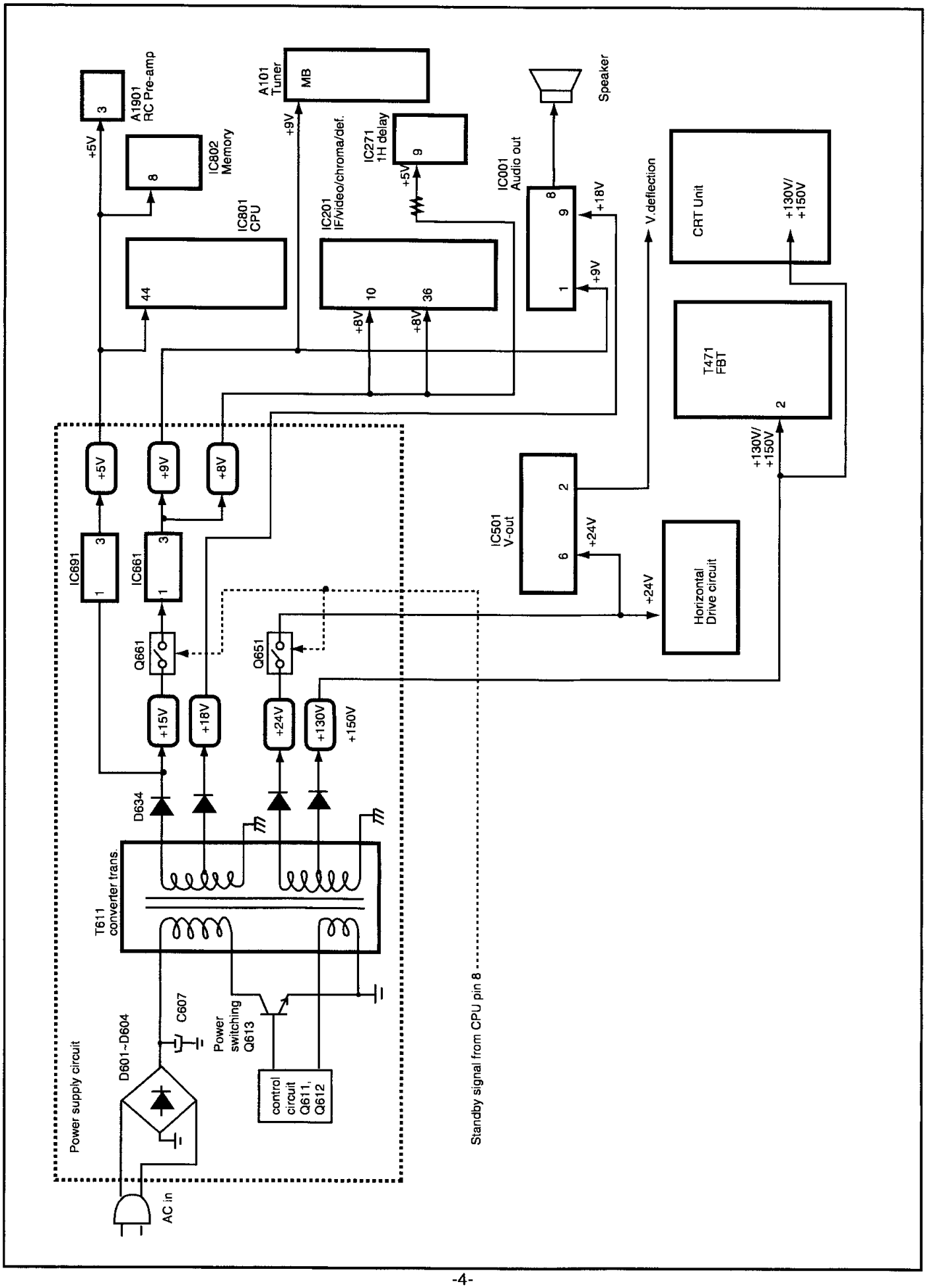
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark /!\ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark /!\ . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark /!\ .

BLOCK DIAGRAM (Main signal routing)

This is a diagram for all models and therefore differs slightly from the actual block diagram.



(Power supply routing)



CIRCUIT DESCRIPTION

1. POWER SUPPLY

The power supply circuit of the EC5-A chassis is composed of a rectifier smoothing circuit, an oscillation circuit, a control circuit and an output rectifier circuit. The AC input voltage is full-wave rectified by the rectifier smoothing circuit, and an unstable DC voltage is generated at both terminals of the smoothing capacitor C607. This voltage is input to the oscillation circuit. The oscillation circuit is provided with a blocking oscillator circuit that switches the switching transistor Q613 ON and OFF, and an oscillation frequency and a duty square wave pulse are generated in the input windings according to operation of the control circuit. A square-wave pulse whose size is dependent on the turn ratio of the input and output windings is obtained in the output winding. This is rectified in the output rectifier circuit, and the desired DC voltage is obtained.

2. IF & DEFLECTION (TDA8361)

The IF output signal from the tuner passes through the SAW filter, and it is input to pin45 and pin46 of IC201. The signal input to the IC passes through the IF amplifier, video detection and video amplifier circuits and is output from pin7 as a composite video signal. And after this signal is converted to impedance at Q151, supplies to the video and chroma amplifier stages.

The sync.-separation circuit separates the video signals applied to pin13(internal video signal) or pin15(external video signal) to vertical- and horizontal-sync. signals respectively. The horizontal oscillator requires no external components and is fully integrated. The oscillator is always running when the start-pin36 is supplied with 8V. Horizontal drive signal is output from pin37. VR361 is for adjustment of the horizontal centring. The separated vertical-sync. signal from sync. separation circuit passes through the vertical-separation circuit, and applied to trigger divider circuit. The horizontal oscillation pulse and input vertical sync. pulse are monitored by the trigger divider circuit, and switching 50Hz and 60Hz system, the vertical amplitude automatically adjusted for 50Hz and 60Hz. The output signal from the trigger divider is triggered vertical oscillation circuit consisting of C351, R356 and pin42, and vertical drive pulse is output from pin43. VR501 is for changing the amount of AC feedback applied to pin41 and for adjustment of the vertical amplitude.

3. VIDEO CHROMA & R.G.B. (TDA8361)

The composite video signal output from the pin7 of IC201 passes through Q151-Q154, and it is supplied to pin13. The external video signal output from SCART is supplied to pin15. The video signal input to pin13 or pin15 is separated to luminance (Y) signal and chroma signal in IC201. These pins are used in common with H/V-sync. separation input. The peaking of Y signal is adjusted by DC voltage of pin14. ("SHARPNESS" control) The chroma signal is divided into R-Y and B-Y chroma signals, demodulated in IC201, and output from pin30 (R-Y) and pin31 (B-Y). These chroma signals pass through the 1H delay line circuit (IC271), and they are input to pin29 (R-Y) and pin28 (B-Y). These R-Y/B-Y signals pass through RGB matrix circuit and RGB selector circuit of IC201. The internal RGB signals are generated in RGB matrix circuit and the RGB selector, consisting linear amplifiers, clamps and selects either the internal RGB signals or the external RGB signals input from pin22(R), pin23(G), pin24(B). Selection is controlled by the voltage at the RGB switch control (pin21) and mixed RGB modes are possible since RGB switching is fast. The RGB switch also functions as a fast blanking pin by blanking the RGB output stages; here internal and external RGB signals are overruled. The colour gain is controlled by DC voltage of pin26. ("COLOUR" control) The contrast control voltage present at pin25, and the brightness control voltage present at pin17 controls DC level of RGB signals. The RGB signals are finally buffered before being available at the RGB output pins [pin20 (R), pin19 (G), pin18 (R)].

4. AUDIO OUTPUT(AN5265)

The audio signal output from pin52 of IC201 is input to pin2 of IC001 and passes through the pre-amplifier circuit and drive circuit, after which it is input to the audio amplifier. The audio amplifier is an SEPP (single-ended, push-pull) OTL type and output to pin8 to directly drive the speaker.

5. VERTICAL OUTPUT (LA7832/LA7833)

An IC (LA7832/LA7833) is used for the vertical output circuit in this chassis. The vertical drive pulse from pin43 of IC201 is input to pin4 of IC501. This pulse drives IC501, and vertical scanning is performed. In the first half of scanning a deflecting current is output from pin2 and passes through the following path:

Vcc(B4) → D501 → pin3 → pin2 → DY → C512 → VR501/R509. An electric charge is then stored in C512. In the last half of scanning the current path is C512 → DY → pin2 → pin1 → VR501/R509 → C512. In this way, an amplifying sawtooth waveform current flows directly to DY to perform electron beam defection. Next, in the first half of the banking period the vertical drive pulse suddenly becomes OFF, and in order to reduce the current flowing to DY, the current path becomes as follows by the inductance of DY:

DY → pin2 → pin1 → VR501/R509 → C512 → DY. Also, when the charge of DY has dissipated, the current path becomes Vcc24V → pin6 → pin7 → C502 → pin3 → pin2→ DY → C512 → VR501/R509, and when the prescribed current value is reached, the vertical drive pulse becomes ON. This completes one cycle.

6. HORIZONTAL OUTPUT

A horizontal oscillation signal is output from pin37 of IC201 and switches the drive transistor Q431. This switch-

ing signal is current amplified by the drive transformer T431 and drives the output transistor Q432. When Q432 becomes ON, an amplifying current flows directly to DY through C441/C442 → DY → Q432 → GND, and defection is performed in the last half of the scanning period. Next, when Q432 becomes OFF, the charge that had been stored in DY up to that point releases a resonance current to the resonant capacitors C421/C423 and charges them. The current stored in C421/C423 is then flowed back to DY, and an opposite charge is then stored in DY. This opposite charge then switches the dumper diode in Q432 ON, the resonance state is completed, and an amplifying current is then flowed again directly to DY through the dumper diode. By this means, deflection in the first half of the scanning period is performed, and when Q432 becomes ON at the end of the first half of the scanning period, deflection during the last half is begun, thus completing one cycle.

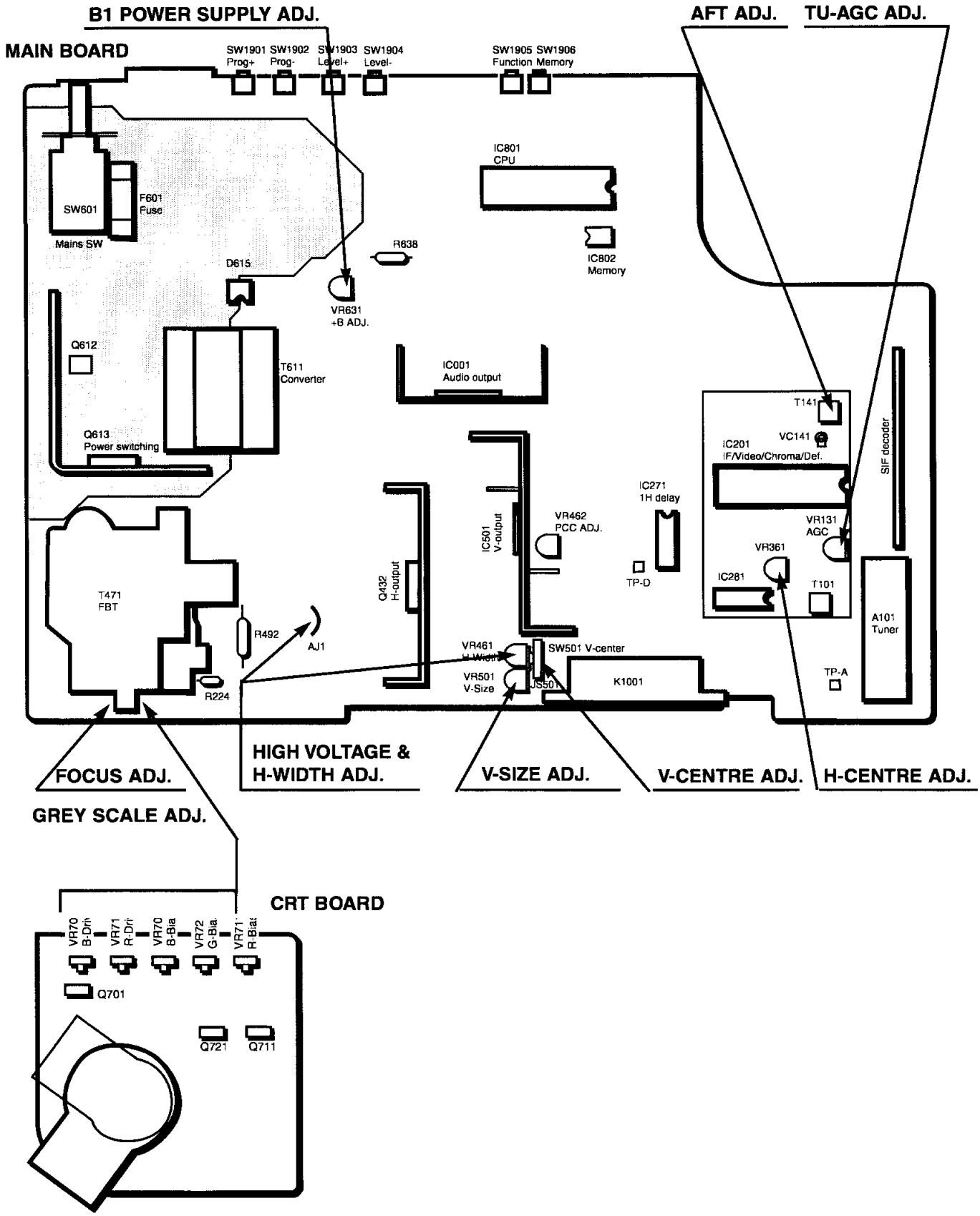
In the PCC circuit consisting of Q461 and Q462, the parabola signal supplied from the vertical circuit is added at the horizontal output stage and pincushion compensation is performed by varying the DC voltage bias. Further, the ABL voltage is feedback to the base of Q462 to compensate for width variations due to variations in the beam current.

7. CPU <System and Teletext Control>

Pin description

Pin1: Tuning voltage output
Pin2: Band switch output 3 (UHF)
Pin3: Sharpness control output (6-bit DAC)
Pin4: Colour control output (6-bit DAC)
Pin5: Contrast control output(6-bit DAC)
Pin6: Brightness control output(6-bit DAC)
Pin7: Volume control output(6-bit DAC)
Pin8: Power ON/OFF output (Power-On:Lo)
Pin9: AFT signal input
Pin10: Option SW1&Keyboard scan input (DC)
Pin11: Option SW2
Pin12: 50/60Hz switch input (50Hz: Hi)
Pin13: GND
Pin14: TV/AV switch output (TV: Hi)
Pin15: 5.5/6.5 switch output
Pin16: Nega./posi switch output
Pin17: Function signal input for SCART
Pin18: L switch output
Pin19: L' switch output
Pin20: LED drive
Pin21: Ignore output
Pin22: GND
Pin23: CVBS input0 (Internal)
Pin24: CVBS input1 (Internal/External)
Pin25: Black
Pin26: IREF
Pin27: Odd/Even output
Pin28: GND
Pin29: -
Pin30: V-deflection stop output(Stop:Lo)
Pin31: RGB REF
Pin32: Blue output for OSD
Pin33: Green output for OSD
Pin34: Red output for OSD
Pin35: Blanking output for OSD
Pin36: H-sync. input (Horizontal pulse for OSD)
Pin37: V-sync. input (Vertical pulse for OSD)
Pin38~39: Supply (+5V)
Pin 40: OSC GND
Pin 41: Oscillator input for CPU
Pin 42: Oscillator output for CPU
Pin 43: Reset input
Pin 44: Supply (+5V)
Pin 45: Protect signal input (L:Power circuit defects)
Pin 46: Ident. signal input
Pin 47: R/C signal input
Pin 48: Mute output in no picture
Pin 49: I²C bus SCL (Serial clock)
Pin 50: I²C bus SDA (Serial date)
Pin 51: Option SW5 & Band switch output1
Pin 52: Band switch output2

SERVICE CONTROL ADJUSTMENT



B1 POWER SUPPLY ADJUSTMENT

1. Set VR641 to be mechanical centre before pressing the main switch.
2. Tune the receiver to PAL circular pattern.
3. Set brightness and contrast controls to normal.
4. Connect digital V-meter to the right side terminal of R638.
5. By using VR631, adjust voltage to 130 ± 0.5 V **(for 14 and 21 inch)**.
   By using VR631, adjust voltage to 150 ± 0.5 V **(for 25 and 28 inch)**.

AFT ADJUSTMENT

1. Tune the receiver to the clearest station.
2. By using T141, adjust AFT to obtain the best picture.

AGC ADJUSTMENT

NOTE: *Do not attempt this adjustment with weak signal.*

1. Tune the receiver to the clearest station.
2. Set AGC VR(VR131) in direction which causes snow noise to appear, then in the opposite direction until snow noise just disappears.

GREY SCALE ADJUSTMENT

[SCREEN VR ADJUSTMENT]

1. Tune the receiver to the white pattern.
2. Set brightness and contrast controls to normal.
3. Set VR702 and VR712 to be mechanical centre.
4. Turn VR701, VR711 and VR721 fully counter-clockwise.
5. Connect a short lead between pin30 of IC801 and GND to enter the service mode.
6. Set screen VR for one colour to be just visible.

[BIAS VR ADJUSTMENT]

7. By using VR701, VR711 or VR721, adjust line to be white.
8. Disconnect a short lead.

[DRIVE VR ADJUSTMENT]

9. By using VR701 and VR711, adjust white balance.

HIGH VOLTAGE & WIDTH ADJUSTMENT

[HIGH VOLTAGE ADJUSTMENT]

1. Tune the receiver to circular pattern.
2. Set brightness and contrast controls to maximum.
3. Connect digital V-meter to both terminals of R224, and high voltage meter to CRT anode.
4. Confirm high voltage to be 21.0 ± 1 KV at beam current 0.7mA, and less than 25.0 KV at 0 beam current **(for 14 inch)**.
   Confirm high voltage to be 25.0 ± 1 KV at beam current 1.2, and less than 28.0 KV at 0 beam current **(for 21 inch)**.
   Confirm high voltage to be 26.0 ± 1 KV at beam current 1.3, and less than 29.0 KV at 0 beam current **(for 25 inch)**.
   Confirm high voltage to be 26.0 ± 1 KV at beam current 1.4, and less than 29.0 KV at 0 beam current **(for 28 inch)**.

[H-WIDTH ADJUSTMENT]

5. If H-width is too wide or narrow, connect or disconnect a lead wire AD1**(for 14 and 21 inch)**.
   Adjust VR462 to obtain proper H- width **(for 25 and 28 inch).**
6. Reconfirm high voltage.

H-CENTRE ADJUSTMENT

1. Tune the receiver to circular pattern.
2. Adjust H-centre by using VR361.

V-CENTRE ADJUSTMENT

1. Tune the receiver to circular pattern.
2. Adjust V-centre by using SW501.
   For 14 inch model, connect or disconnect JS501 to obtain proper vertical screen centre.

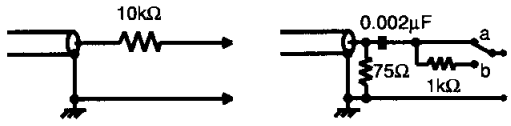
V-SIZE ADJUSTMENT

1. Tune the receiver to circular pattern.
2. Adjust V-size by using VR501.

FOCUS ADJUSTMENT

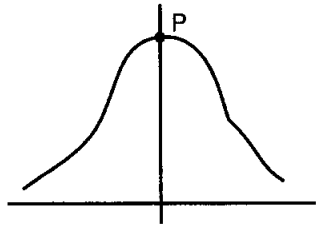
By using FOCUS VR, adjust focus control for well scanning lines.

CIRCUIT ALIGNMENT

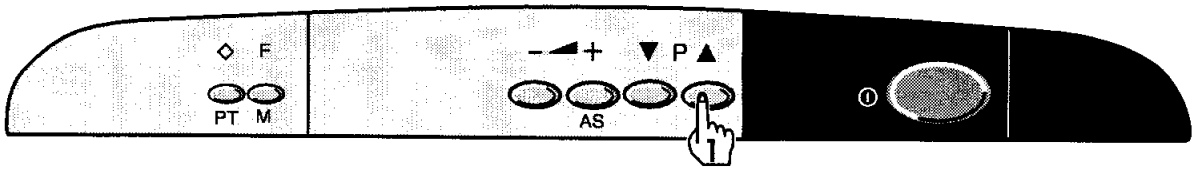


Input probe Output probe

VIF alignment

SETTING		Adjustment	Waveform
DC 15.5V AGC voltage (4.3-4.5V) Output probe Input probe Marker frequency Sweep ATT 0dB=176mVrms/75	C644 + IC201-pin48 IC201-pin45 (Side b) IC201-pin7 38.9MHz 20dB	By using T141, adjust "P" to be maximum amplitude.	

MEMORY IC REPLACEMENT (Important Notice)



When you replace a memory IC (IC802), it is necessary to initialise the IC as follows.

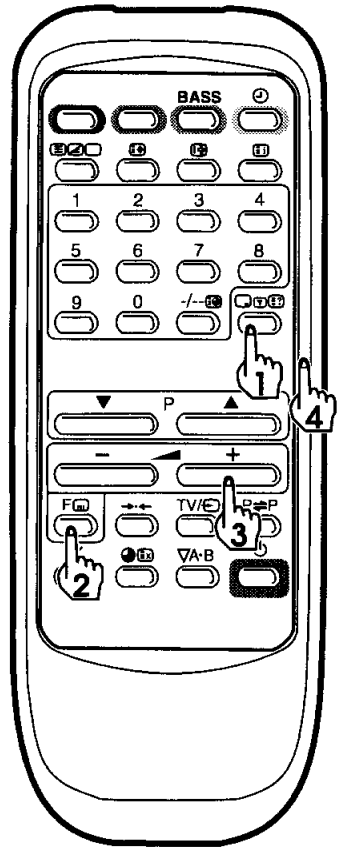
A. Initialisation of Memory IC

1. When you press and hold the **Recall** button on the RC transmitter and then press the **Prog +** button on the TV set, the following picture will appear on the screen.

ITEM -1	SET→ 0

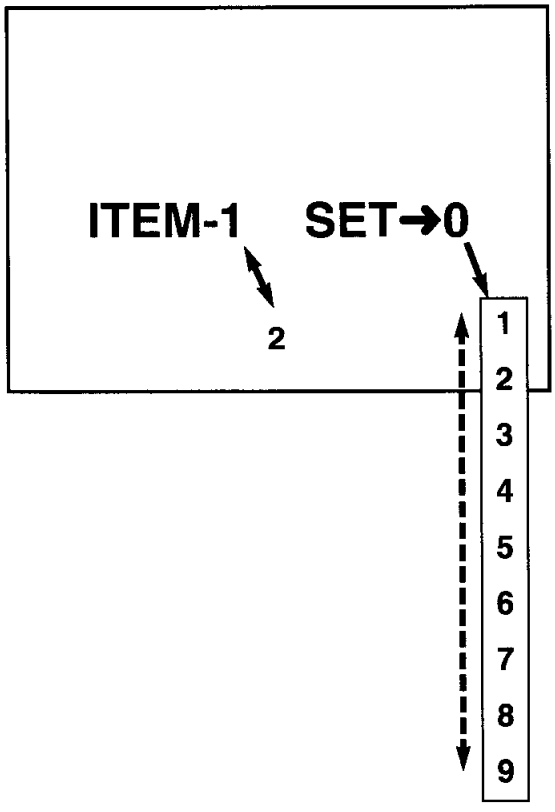
2. Confirm SET number of all items is "**0**" by pressing the **Function** button.
3. If it is not "0", change to "0" by the **Level (+/-)** button. (Changing the SET number, automatically memorised.)
4. Press the **Recall** button, to return the normal TV mode.

For more information, please refer to "special functions" on the instruction manual.



Special Function

- **Maximum volume setting and prohibition of presetting**
- **Start up programme position**



This TV set allows you to set up the following special functions.

■ Maximum volume setting and prohibition of presetting

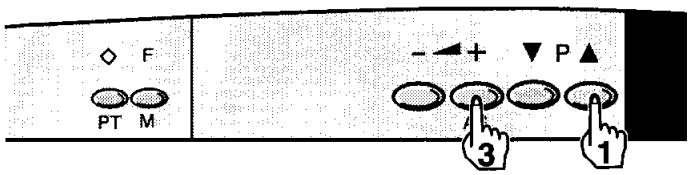
ITEM-1
Sets the current volume as the maximum volume level and prohibition of presetting.

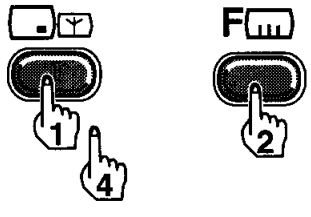
SET→ 0 NO
SET→ 1 YES

■ Start up programme position

ITEM-2
Presets the programme position when the set is switched on.

SET→ 0 Last programme position start
SET→ 1 Programme position "1" start
SET→ 2 Programme position "2" start
SET→ 3 Programme position "3" start
SET→ 4 Programme position "4" start
SET→ 5 Programme position "5" start
SET→ 6 Programme position "6" start
SET→ 7 Programme position "7" start
SET→ 8 Programme position "8" start
SET→ 9 "AV" start





SETTING PROCEDURE

1 Press and hold the **button** on the **Remote control handset** and then press the **P▲ button** on the **TV set**.

2 To select the "ITEM" number, press the **F button** on the **remote control handset**.

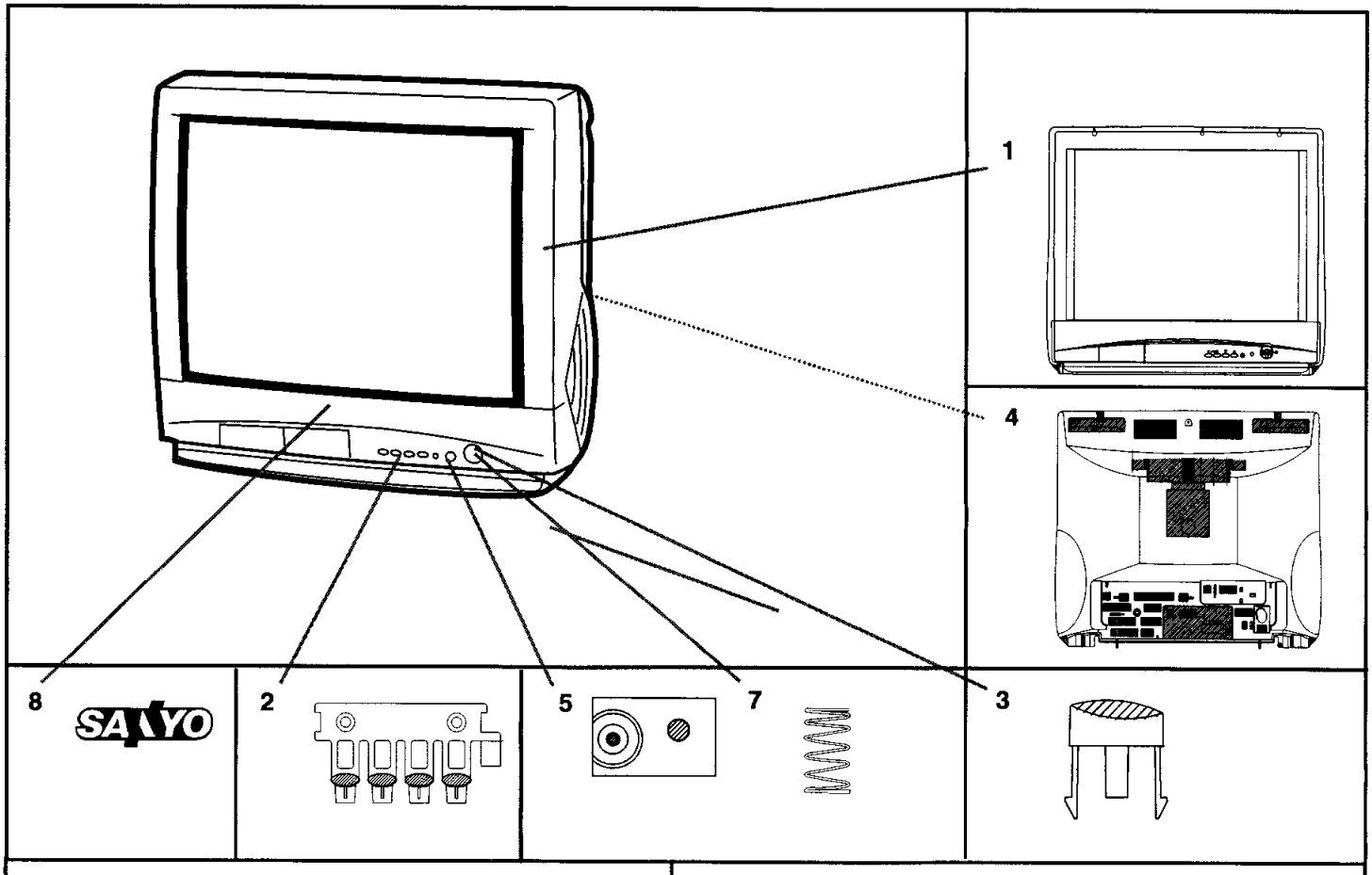
3 To select the "SET" number, press the + or - **button** repeatedly.

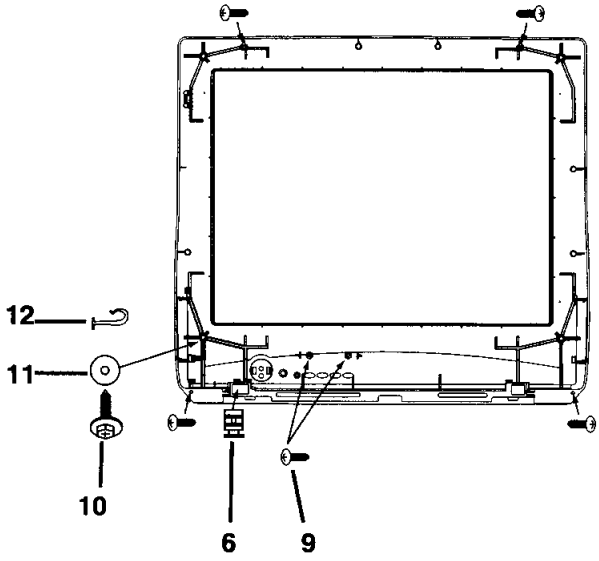
4 To return to the normal TV mode, press the **button**.

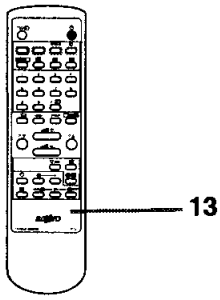
✎ The setting conditions of all items can be confirmed.

✎ Special functions are not cancelled if the TV set is switched off or the mains disconnected.

CABINET PARTS LIST SERVICE REF.NO. C21ES35B-01







Ref. No.	Part No.	Description
CABINET PARTS		
1	610 266 2887	ASSY,CABINET FR-F2TC
2	610 265 2383	BUTTON UNITED-F2TC
3	610 265 2390	BUTTON POWER-F2TC
4	610 265 0136	CABINET BACK-F2TC
5	610 265 2406	DEC IND-F2TC
6	610 253 2449	HOLDER AC CORD-GBR-D4VA
7	610 261 3032	SPRING-E7GC
8	645 003 9256	BADGE,SANYO*46.2X13.5L4
9	411 076 1400	SCREW TPG 4 X 14
10	412 009 3003	CRT SCREW 6 X 30
11	610 224 5721	SPACER CUSHION-B3MY
12	610 265 4202	HOLDER DEGAUSS COIL-F3SC
REMOTE CONTROL		
13	JXTJ	RC TRANSMITTER
	645 000 6708	BATTERY,MANGANANESE
INSTRUCTION MANUAL		
	610 266 3136	INSTRUCTIONS MANUAL-F2TCV
TV STAND		
	610 266 1026	TV STAND-F2TCV (MST2171) (Packed in box)
or	610 267 8413	TV STAND-F2TCV (MST2172) (Shrink wrapped)

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a ⚠ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Parts order must contain Service Ref. No., Part No., and descriptions.

Read description in the Capacitor and Resistor as follows:

CAPACITOR
CERAMIC 100P K 50V

- 50V — Rated Voltage
- K — Tolerance Symbols:
  Less than 10PF
  A: Not specified B: ±0.1PF C: ±0.25PF
  D: ±0.5PF F: ±1PF G: ±2PF
  R: ±0.25-0PF S: ±0-0.25PF E: +0-1PF
  More than 10PF
  A: Not specified B: ±0.1% C: ±0.25%
  D: ±0.5% F: ±1% G: ±2%
  H: ±3% J: ±5% K: ±10%
  L: ±15% M: ±20% N: ±30%
  P: +100-0% Q: +30-10% T: +50-10%
  U: +75-10% V: +20-10% W: +100-10%
  X: +40-20% Y: +150-10% Z: +80-20%
- 100P — Rated value: P=pico farad, U=Micro farad
- CERAMIC — Material:

CERAMIC..... Ceramic
MT-PAPER..... Metallized Paper
POLYESTER..... Polyester
MT-POLYEST.... Metallized Polyester
POLYPRO..... Polypropylene
MT-POLYPRO.... Metallized Polypropylene
COMPO FILM..... Composite film
MT-COMPO..... Metallized Composite
STYRENE..... Styrene
TA-SOLID..... Tantalum Solid
AL-SOLID..... Aluminium Solid
ELECT..... Electrolytic
NP-ELECT..... Non-polarised Electrolytic
OS-SOLID..... Aluminium Solid with Organic Semiconductive Electrolytic
DL-ELECT..... Double Layered Electrolytic

RESISTOR
CARBON 4.7K J A 1/4W

- 1/4W — Rated Wattage
- A — Performance Symbols:
  A: General B: Non flammable Z: Low noise
  Other: Temperature coefficient
- J — Tolerance Symbols:
  A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5%
  F: ±1% G: ±2% J: ±5% K: ±10%
  M: ±20% P: +5-15%
- 4.7K — Rated value, ohms:
  K: 1,000, M: 1,000,000
- CARBON — Material:

CARBON..... Carbon
MT-FILM..... Metal Film
OXIDE-MT..... Oxide Metal Film
SOLID..... Composition
MT-GLAZE..... Metal Glaze
WIRE WOUND... Wire Wound
CERAMIC RES.. Ceramic
FUSIBLE RES.... Fusible

SERVICE REF. No. C21ES35B-01

OUT OF CIRCUIT BOARD

Ref. No.	Part No.	Description
PICTURE TUBE		
⚠Q901	414 007 9001	CRT A51EBV13X09
COIL		
⚠L901	645 002 5624	COIL,DEGAUSSING
	645 002 5631	COIL,DEGAUSSING
MISCELLANEOUS		
SP901	610 215 6089	SPEAKER
⚠W901	645 011 8838	CORD,POWER
W902	610 024 2531	GROUNDING CONNECTOR

ASSY,PWB,MAIN F2TCV 1AA0B10E3460A

Ref. No.	Part No.	Description
TRANSISTOR		
Q1021	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q1022	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q1031	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q1032	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q121	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q151	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q154	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP

Ref. No.	Part No.	Deacription
	405 028 7909	TR 2SA608-G-CTV-NP
Q161	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q2001	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q201	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q241	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q251	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q431	405 013 6801	TR 2SC2274-E
	405 013 7006	TR 2SC2274-F
Q432	405 022 6809	TR 2SD1651-CTV-YB
Q611	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q612	405 058 0208	TR 2SC3807-R-CTV-YA
Q613	405 022 8506	TR 2SD1710-CTV-YB
Q631	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q651	405 089 0000	TR 2SA1707-S
	405 089 0109	TR 2SA1707-T
	405 009 6907	TR 2SB985-S
	405 009 7003	TR 2SB985-T
Q661	405 008 4805	TR 2SB764-E
Q682	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q685	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q686	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q801	405 118 4207	TR PH2369
Q831	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q839	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP

Ref. No.	Part No.	Deacription
Q861	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP
Q871	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q872	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q873	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q874	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
Q875	406 007 2106	TR JC546A
	406 007 2007	TR JC546B
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP

INTEGRATED CIRCUIT

IC001	409 073 1509	IC AN5265
IC201	409 380 8703	IC TDA8361/N5
IC271	409 291 0605	IC TDA4661/V2
	409 322 0505	IC TDA4662/V1
	409 371 6909	IC TDA4662/V2
IC501	409 183 5008	IC LA7832
IC661	409 367 2809	IC BA178M09T
	409 366 7904	IC UPC78M09AHF
IC691	409 298 5306	IC AN78M05 LB
	409 241 5407	IC BA178M05T
	409 265 4806	IC L78M05CV
	409 172 1509	IC MC78M05CT
	409 320 5700	IC UPC78M05AHF
IC801	410 276 7106	IC SAA5290ZP/065
IC802	409 247 7702	IC ST24C02AB1
	409 281 8307	IC 24C02A/P
	409 333 3700	IC 24LC02B/P

CAPACITOR

C001	403 043 3906	ELECT	33U M	16V
C002	403 270 3908	MT-POLYEST	0.47U K	63V
	403 256 0808	MT-COMPO	0.47U J	50V
C003	403 059 3808	POLYESTER	2200P K	50V
	403 179 2606	POLYESTER	2200P K	50V
C004	403 051 0607	ELECT	4.7U M	50V
C005	403 041 8804	ELECT	10U M	16V
C006	403 041 8804	ELECT	10U M	16V
C010	403 270 2901	MT-POLYEST	0.1U K	63V
	403 237 8007	MT-COMPO	0.1U J	50V
C011	403 045 1504	ELECT	1000U M	25V
C012	403 199 9708	ELECT	470U M	25V
C013	403 086 2300	NP-ELECT	1U M	50V
C020	403 069 8305	CERAMIC	0.01U Z	50V
C100	403 043 9106	ELECT	47U M	16V
C1001	403 009 5708	CERAMIC	100P J	50V
C1002	403 270 3908	MT-POLYEST	0.47U K	63V
	403 256 0808	MT-COMPO	0.47U J	50V
C1003	403 069 9500	CERAMIC	0.01U Z	50V
C1004	403 041 8804	ELECT	10U M	16V
C101	403 043 9106	ELECT	47U M	16V
C1021	403 068 0409	CERAMIC	0.1U Z	25V

Ref. No.	Part No.	Deacription		
	403 070 2606	CERAMIC	0.1U Z	50V
C105	403 049 0008	ELECT	1U M	50V
C121	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C131	401 037 5004	MT-GLAZE	0.000 ZA	1/10W
C132	403 069 1702	CERAMIC	1000P K	50V
C133	403 069 9500	CERAMIC	0.01U Z	50V
C134	403 049 9803	ELECT	2.2U M	50V
C135	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C136	403 194 4609	ELECT	470U M	16V
C137	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C138	403 069 9500	CERAMIC	0.01U Z	50V
C140	403 010 8507	CERAMIC	12P J	50V
C141	403 028 4102	CERAMIC	56P J	50V
C142	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C143	403 073 4201	CERAMIC	3900P K	50V
C153	403 011 4904	CERAMIC	120P J	50V
C155	401 037 5004	MT-GLAZE	0.000 ZA	1/10W
C160	403 069 1702	CERAMIC	1000P K	50V
C161	403 072 5001	CERAMIC	270P K	50V
C171	403 049 0008	ELECT	1U M	50V
C172	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C173	403 041 8804	ELECT	10U M	16V
C2001	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C2002	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C2003	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C201	403 014 3409	CERAMIC	18P J	50V
C202	403 270 2901	MT-POLYEST	0.1U K	63V
	403 237 8007	MT-COMPO	0.1U J	50V
C203	403 073 9107	CERAMIC	4700P K	50V
C204	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C205	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C206	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C207	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C208	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C212	403 049 9803	ELECT	2.2U M	50V
C215	403 270 3908	MT-POLYEST	0.47U K	63V
	403 256 0808	MT-COMPO	0.47U J	50V
C222	404 056 5109	ELECT	2.2U M	100V
C231	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C233	403 068 0409	CERAMIC	0.1U Z	25V
	403 070 2606	CERAMIC	0.1U Z	50V
C251	403 043 6006	ELECT	330U M	16V
C271	403 069 1702	CERAMIC	1000P K	50V
C272	403 069 1702	CERAMIC	1000P K	50V
C273	403 069 9500	CERAMIC	0.01U Z	50V
C275	403 069 9500	CERAMIC	0.01U Z	50V
C276	403 069 9500	CERAMIC	0.01U Z	50V
C277	403 069 9500	CERAMIC	0.01U Z	50V
C351	403 270 2901	MT-POLYEST	0.1U K	63V
	403 237 8007	MT-COMPO	0.1U J	50V
C352	403 061 8303	POLYESTER	4700P K	50V
	403 179 1104	POLYESTER	4700P K	50V
C353	403 073 9107	CERAMIC	4700P K	50V
C354	403 049 0008	ELECT	1U M	50V
C361	403 072 5605	CERAMIC	2700P K	50V
C362	403 069 9500	CERAMIC	0.01U Z	50V
C363	403 042 2405	ELECT	100U M	16V
⚠C421	404 046 8400	MT-POLYPRO	8200P J	1.5K

Ref. No.	Part No.	Deacription		
⚠C423	403 324 2406	CERAMIC	330P K	3K
	403 287 3601	CERAMIC	330P K	3K
	403 232 3007	CERAMIC	330P K	3K
C429	403 066 6106	MT-POLYEST	0.47U J	250V
C432	403 075 7101	CERAMIC	1000P K	500V
C433	403 076 3102	CERAMIC	3900P K	500V
C434	403 054 0703	ELECT	47U M	35V
C438	403 059 3808	POLYESTER	2200P K	50V
	403 179 2606	POLYESTER	2200P K	50V
⚠C441	403 216 7601	POLYPRO	0.36U J	200V
C445	403 049 4204	ELECT	10U M	50V
C491	403 076 5304	CERAMIC	680P K	500V
C492	403 115 0802	ELECT	22U M	100V
C501	403 054 1502	ELECT	470U M	35V
C502	403 053 2104	ELECT	220U M	35V
C503	403 024 2102	CERAMIC	39P J	50V
C504	403 069 9500	CERAMIC	0.01U Z	50V
C505	403 075 7101	CERAMIC	1000P K	500V
C506	403 270 2901	MT-POLYEST	0.1U K	63V
	403 237 8007	MT-COMPO	0.1U J	50V
C511	403 188 1201	MT-POLYEST	0.15U K	100V
	403 313 7603	MT-COMPO	0.15U J	100V
C512	403 148 0404	ELECT	1000U M	25V
C513	403 049 4204	ELECT	10U M	50V
C520	403 009 5708	CERAMIC	100P J	50V
⚠C601	404 056 1408	MT-POLYEST	0.1U M	250V
	404 074 6508	MT-COMPO	0.1U K	250V
⚠C602	404 056 1408	MT-POLYEST	0.1U M	250V
	404 074 6508	MT-COMPO	0.1U K	250V
C606	403 076 6707	CERAMIC	1000P K	1K
	403 312 8205	CERAMIC	1000P K	1K
C607	404 038 1600	ELECT	100U M	400V
C614	403 270 2901	MT-POLYEST	0.1U K	63V
	403 237 8007	MT-COMPO	0.1U J	50V
C615	403 058 2604	POLYESTER	0.015U J	50V
	403 179 3207	POLYESTER	0.015U J	50V
C616	403 247 6604	CERAMIC	680P K	2K
	403 275 8205	CERAMIC	680P K	2K
	403 232 2109	CERAMIC	680P K	2K
C617	403 059 6205	POLYESTER	0.022U K	50V
	403 179 2408	POLYESTER	0.022U K	50V
⚠C621	404 059 9203	CERAMIC	1000P M	400V
	404 060 6000	CERAMIC	1000P M	400V
⚠C624	404 044 2806	CERAMIC	470P K	400V
	404 044 2707	CERAMIC	470P M	400V
C631	403 247 5003	CERAMIC	470P K	1K
	403 269 1809	CERAMIC	470P K	1K
	403 232 0501	CERAMIC	470P K	1K
C634	403 247 5003	CERAMIC	470P K	1K
	403 269 1809	CERAMIC	470P K	1K
	403 232 0501	CERAMIC	470P K	1K
C641	404 042 4505	ELECT	220U M	160V
C643	403 148 2002	ELECT	470U M	35V
C644	403 148 0404	ELECT	1000U M	25V
	403 134 5307	ELECT	1000U M	25V
C645	403 148 0404	ELECT	1000U M	25V
	403 134 5307	ELECT	1000U M	25V
C662	403 044 1703	ELECT	470U M	16V
C663	403 040 3701	ELECT	220U M	10V
C685	403 049 0008	ELECT	1U M	50V
C691	403 039 6508	ELECT	100U M	10V
C801	403 069 9500	CERAMIC	0.01U Z	50V
C805	403 051 0607	ELECT	4.7U M	50V
C807	403 070 2606	CERAMIC	0.1U Z	50V
C814	403 046 9905	ELECT	4.7U M	25V
C819	403 046 9905	ELECT	4.7U M	25V
C824	403 049 0008	ELECT	1U M	50V
C829	403 049 0008	ELECT	1U M	50V
C834	403 049 0008	ELECT	1U M	50V
C841	403 069 9500	CERAMIC	0.01U Z	50V
C861	403 138 5600	POLYESTER	5600P J	50V
	403 179 0800	POLYESTER	5600P J	50V

Ref. No.	Part No.	Deacription
C870	403 022 8205	CERAMIC 33P J 50V
C871	403 068 0409	CERAMIC 0.1U Z 25V
	403 070 2606	CERAMIC 0.1U Z 50V
C872	403 043 9106	ELECT 47U M 16V
C873	403 018 0503	CERAMIC 22P J 50V
C874	403 018 0503	CERAMIC 22P J 50V
C875	403 068 0409	CERAMIC 0.1U Z 25V
	403 070 2606	CERAMIC 0.1U Z 50V
C878	403 073 9107	CERAMIC 4700P K 50V
C879	403 068 0409	CERAMIC 0.1U Z 25V
	403 070 2606	CERAMIC 0.1U Z 50V
C881	403 069 9500	CERAMIC 0.01U Z 50V
C882	403 041 8804	ELECT 10U M 16V
C885	403 069 1702	CERAMIC 1000P K 50V
RESISTOR		
R001	401 018 1605	CARBON 33 JA 1/4W
R002	401 027 2303	CARBON 560 JA 1/6W
R003	401 024 7400	CARBON 10K JA 1/6W
R004	401 024 7004	CARBON 1K JA 1/6W
R006	401 026 7408	CARBON 39K JA 1/6W
R1001	401 037 6803	MT-GLAZE 12K JA 1/10W
R1002	401 037 6803	MT-GLAZE 12K JA 1/10W
R1003	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R1004	401 038 7601	MT-GLAZE 560 JA 1/10W
R1005	401 037 5707	MT-GLAZE 100K JA 1/10W
R1007	401 027 6608	CARBON 75 JA 1/6W
R1008	401 026 7408	CARBON 39K JA 1/6W
R1009	401 038 2200	MT-GLAZE 27K JA 1/10W
R1011	401 027 6608	CARBON 75 JA 1/6W
R1015	401 027 6608	CARBON 75 JA 1/6W
R1016	401 027 6608	CARBON 75 JA 1/6W
R1019	401 027 6608	CARBON 75 JA 1/6W
R1020	401 027 6608	CARBON 75 JA 1/6W
R1021	401 038 6307	MT-GLAZE 470 JA 1/10W
R1022	401 024 7400	CARBON 10K JA 1/6W
R1023	401 020 2003	CARBON 4.7K JA 1/4W
R1026	401 038 7601	MT-GLAZE 560 JA 1/10W
R1027	401 038 7601	MT-GLAZE 560 JA 1/10W
R1028	401 038 7601	MT-GLAZE 560 JA 1/10W
R1029	401 038 5003	MT-GLAZE 390 JA 1/10W
R1031	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R1032	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1033	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R109	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R110	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R121	401 038 6505	MT-GLAZE 47K JA 1/10W
R122	401 038 0909	MT-GLAZE 220K JA 1/10W
R123	401 038 0909	MT-GLAZE 220K JA 1/10W
R133	401 037 9101	MT-GLAZE 180 JA 1/10W
R134	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R135	401 038 2200	MT-GLAZE 27K JA 1/10W
R137	401 037 5202	MT-GLAZE 100 JA 1/10W
R138	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R141	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R145	401 038 3504	MT-GLAZE 330 JA 1/10W
R150	401 037 5400	MT-GLAZE 1K JA 1/10W
R151	401 022 1905	CARBON 680 JA 1/4W
R152	401 038 3504	MT-GLAZE 330 JA 1/10W
R159	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R160	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R161	401 019 1000	CARBON 390 JA 1/4W
R162	401 037 5400	MT-GLAZE 1K JA 1/10W
R163	401 027 5205	CARBON 680 JA 1/6W
R164	401 038 6208	MT-GLAZE 47 JA 1/10W
R170	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R171	401 037 5608	MT-GLAZE 10K JA 1/10W
R173	401 037 9101	MT-GLAZE 180 JA 1/10W
R174	401 037 8005	MT-GLAZE 15K JA 1/10W
R1902	401 025 1902	CARBON 15K JA 1/6W
R1903	401 023 2802	CARBON 8.2K JA 1/4W
R1904	401 026 9907	CARBON 4.7K JA 1/6W

Ref. No.	Part No.	Deacription
R1905	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R1906	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1907	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R1908	401 038 3504	MT-GLAZE 330 JA 1/10W
R1909	401 037 5608	MT-GLAZE 10K JA 1/10W
R1911	401 026 9600	CARBON 470 JA 1/6W
R1912	401 025 7805	CARBON 2.2K JA 1/6W
R2001	401 038 2200	MT-GLAZE 27K JA 1/10W
R2002	401 037 5608	MT-GLAZE 10K JA 1/10W
R2003	401 037 6803	MT-GLAZE 12K JA 1/10W
R2004	401 037 7800	MT-GLAZE 150 JA 1/10W
R2005	401 013 6407	CARBON 12K JA 1/4W
R201	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R202	401 037 5707	MT-GLAZE 100K JA 1/10W
R203	401 037 5202	MT-GLAZE 100 JA 1/10W
R204	401 037 5202	MT-GLAZE 100 JA 1/10W
R205	401 037 5202	MT-GLAZE 100 JA 1/10W
R213	401 037 8005	MT-GLAZE 15K JA 1/10W
R214	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R217	401 038 0800	MT-GLAZE 22K JA 1/10W
R218	401 015 2704	CARBON 1.8K JA 1/4W
R222	401 013 7305	CARBON 120K JA 1/4W
R223	401 024 9701	CARBON 12K JA 1/6W
R224	401 012 5708	CARBON 1K JA 1/4W
R226	401 037 5707	MT-GLAZE 100K JA 1/10W
R231	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R232	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R241	401 038 6307	MT-GLAZE 470 JA 1/10W
R242	401 025 7409	CARBON 220 JA 1/6W
R243	401 025 7409	CARBON 220 JA 1/6W
R251	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R252	401 037 5608	MT-GLAZE 10K JA 1/10W
R253	401 024 7400	CARBON 10K JA 1/6W
R271	401 016 2604	CARBON 220 JA 1/4W
R351	401 024 6700	CARBON 100 JA 1/6W
R352	401 037 5806	MT-GLAZE 1M JA 1/10W
R356	401 037 5202	MT-GLAZE 100 JA 1/10W
R357	401 037 8005	MT-GLAZE 15K JA 1/10W
R361	401 038 5409	MT-GLAZE 390K JA 1/10W
R363	401 038 0800	MT-GLAZE 22K JA 1/10W
R364	401 037 5202	MT-GLAZE 100 JA 1/10W
R365	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R371	401 021 3009	CARBON 5.6K JA 1/4W
R429	402 069 8704	WIRE WOUND 8.2 KA 7W
	402 076 0609	WIRE WOUND 8.2 KA 7W
R432	401 037 5400	MT-GLAZE 1K JA 1/10W
R433	401 007 1104	CARBON 1K JA 1/2W
R434	401 009 9306	CARBON 390 JA 1/2W
R444	401 058 3706	OXIDE-MT 1K JA 1W
R447	401 026 9907	CARBON 4.7K JA 1/6W
R448	401 009 5803	CARBON 330 JA 1/2W
R481	401 064 5701	OXIDE-MT 1.8 JA 2W
R491	401 008 3701	CARBON 2.2 JA 1/2W
R495	401 025 4903	CARBON 180K JA 1/6W
R496	401 027 2600	CARBON 5.6K JA 1/6W
R501	401 020 2003	CARBON 4.7K JA 1/4W
R502	401 026 8108	CARBON 4.7 JA 1/6W
R505	401 024 7400	CARBON 10K JA 1/6W
R506	401 025 1605	CARBON 1.5K JA 1/6W
R507	401 025 7409	CARBON 220 JA 1/6W
R508	401 026 1000	CARBON 2.7K JA 1/6W
R509	401 057 9105	OXIDE-MT 1.2 JA 1W
R511	401 060 7402	OXIDE-MT 270 JA 1W
R513	401 059 3903	OXIDE-MT 1.5K JA 1W
R514	401 025 5405	CARBON 2.2 JA 1/6W
⚠R601	401 008 8607	CARBON 220K JA 1/2W
R602	402 060 8109	WIRE WOUND 3.9 KA 5W
	402 072 4205	WIRE WOUND 3.9 KA 5W
R611	401 027 2600	CARBON 5.6K JA 1/6W
R615	401 016 4806	CARBON 22K JA 1/4W
R617	401 024 7004	CARBON 1K JA 1/6W
R619	401 016 1508	CARBON 22 JA 1/4W

Ref. No.	Part No.	Deacription
R620	401 007 5805	CARBON 120K JA 1/2W
R621	401 007 5805	CARBON 120K JA 1/2W
R622	401 014 5201	CARBON 15K JA 1/4W
R623	401 025 7805	CARBON 2.2K JA 1/6W
R624	401 069 1708	OXIDE-MT 68 JA 2W
R625	401 069 1708	OXIDE-MT 68 JA 2W
R626	401 018 3401	CARBON 3.3K GA 1/4W
⚠R628	402 000 8305	SOLID 5.6M KA 1/2W
⚠R629	402 000 8305	SOLID 5.6M KA 1/2W
R635	401 012 8105	CARBON 100K JA 1/4W
R636	401 020 2003	CARBON 4.7K JA 1/4W
R637	401 014 6109	CARBON 150K JA 1/4W
R638	401 060 9307	OXIDE-MT 27K JA 1W
R639	401 024 9701	CARBON 12K JA 1/6W
R642	401 059 3903	OXIDE-MT 1.5K JA 1W
R645	401 065 9609	OXIDE-MT 18 JA 2W
R646	401 025 7805	CARBON 2.2K JA 1/6W
R651	401 012 7009	CARBON 10K JA 1/4W
R652	401 019 1901	CARBON 3.9K JA 1/4W
R661	401 012 7009	CARBON 10K JA 1/4W
R662	401 064 6302	OXIDE-MT 10 JA 2W
R663	401 013 5301	CARBON 1.2K JA 1/4W
R666	401 008 0205	CARBON 18 JA 1/2W
R681	401 012 7009	CARBON 10K JA 1/4W
R686	401 016 5803	CARBON 220K JA 1/4W
R687	401 021 5003	CARBON 560K JA 1/4W
R688	401 012 7009	CARBON 10K JA 1/4W
R689	401 025 8208	CARBON 22K JA 1/6W
R800	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R801	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R802	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R803	401 037 9408	MT-GLAZE 180K JA 1/10W
R804	401 012 7009	CARBON 10K JA 1/4W
R805	401 037 8005	MT-GLAZE 15K JA 1/10W
R806	401 066 2104	OXIDE-MT 18K JA 2W
R807	401 037 5608	MT-GLAZE 10K JA 1/10W
R812	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R813	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R814	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R816	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R817	401 037 5608	MT-GLAZE 10K JA 1/10W
R818	401 038 0800	MT-GLAZE 22K JA 1/10W
R819	401 038 6505	MT-GLAZE 47K JA 1/10W
R821	401 037 5202	MT-GLAZE 100 JA 1/10W
R822	401 037 5608	MT-GLAZE 10K JA 1/10W
R823	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R824	401 026 4605	CARBON 33K JA 1/6W
R826	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R827	401 038 5102	MT-GLAZE 3.9K JA 1/10W
R828	401 038 3702	MT-GLAZE 33K JA 1/10W
R831	401 037 5202	MT-GLAZE 100 JA 1/10W
R832	401 037 6803	MT-GLAZE 12K JA 1/10W
R833	401 039 0502	MT-GLAZE 82K JA 1/10W
R834	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R836	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R837	401 038 6505	MT-GLAZE 47K JA 1/10W
R838	401 037 8005	MT-GLAZE 15K JA 1/10W
R839	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R840	401 020 2003	CARBON 4.7K JA 1/4W
R841	401 038 0800	MT-GLAZE 22K JA 1/10W
R842	401 019 1901	CARBON 3.9K JA 1/4W
R843	401 037 5608	MT-GLAZE 10K JA 1/10W
R844	401 037 5608	MT-GLAZE 10K JA 1/10W
R846	401 020 2003	CARBON 4.7K JA 1/4W
R847	401 012 7009	CARBON 10K JA 1/4W
R848	401 020 2003	CARBON 4.7K JA 1/4W
R852	401 012 5708	CARBON 1K JA 1/4W
R856	401 016 4806	CARBON 22K JA 1/4W
R861	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R862	401 038 0800	MT-GLAZE 22K JA 1/10W
R863	401 038 0800	MT-GLAZE 22K JA 1/10W
R864	401 037 5400	MT-GLAZE 1K JA 1/10W

Ref. No.	Part No.	Deacription
R865	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R866	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R867	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R868	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R869	401 038 2200	MT-GLAZE 27K JA 1/10W
R870	401 038 0800	MT-GLAZE 22K JA 1/10W
R871	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R872	401 038 3702	MT-GLAZE 33K JA 1/10W
R873	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R874	401 037 5608	MT-GLAZE 10K JA 1/10W
R875	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R876	401 037 5608	MT-GLAZE 10K JA 1/10W
R877	401 039 0403	MT-GLAZE 8.2K JA 1/10W
R878	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R879	401 012 7009	CARBON 10K JA 1/4W
R880	401 038 6505	MT-GLAZE 47K JA 1/10W
R881	401 038 2200	MT-GLAZE 27K JA 1/10W
R883	401 020 0801	CARBON 470 JA 1/4W
R884	401 038 2101	MT-GLAZE 2.7K JA 1/10W
R885	401 038 5102	MT-GLAZE 3.9K JA 1/10W
R887	401 038 5102	MT-GLAZE 3.9K JA 1/10W
R891	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R892	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R895	401 037 6704	MT-GLAZE 1.2K JA 1/10W

VARIABLE RESISTOR

VR131	645 006 5422	VR,SEMI,10K N
	610 239 7567	VR B-10K
VR361	645 006 5422	VR,SEMI,10K N
	610 239 7567	VR B-10K
VR501	645 006 5408	VR,SEMI,100 N
	610 232 7908	VR,SEMI,100 N
VR631	645 006 5514	VR,SEMI,2.2K N
	610 239 7574	VR B-2K

TRANSFORMER

T141	610 037 4522	S COIL
T431	610 000 1053	DRIVE TRANS
	610 000 1060	DRIVE TRANS
⚠T471	645 014 2987	TRANS,FLYBACK
⚠T611	645 007 7487	TRANS,POWER,PULSE
	645 009 0332	TRANS,POWER,PULSE

COIL

L1002	645 001 4567	INDUCTOR,10U K
L1003	645 001 4567	INDUCTOR,10U K
L1006	645 001 4567	INDUCTOR,10U K
L1021	645 002 1787	CORE,PIPE
L103	645 008 2894	INDUCTOR,5.6U K
L141	645 001 4567	INDUCTOR,10U K
L151	645 003 9751	INDUCTOR,18U K
L161	645 001 4567	INDUCTOR,10U K
L201	645 008 2863	INDUCTOR,4.7U K
L202	645 008 2863	INDUCTOR,4.7U K
L203	645 008 2863	INDUCTOR,4.7U K
L431	610 032 5852	FILTER COIL
	610 032 5869	FILTER COIL
	645 008 5659	INDUCTOR,5.6U K
L444	610 000 0605	LINEARITY COIL
	610 210 8071	LINEARITY COIL
L445	610 000 0278	COIL
	610 205 1117	COIL
L521	645 001 5748	INDUCTOR,33U K
⚠L601	645 012 3337	LINE FILTER
L607	610 237 1000	PIPE CORE
L608	610 237 1000	PIPE CORE
L615	645 002 1787	CORE,PIPE
L801	645 008 2894	INDUCTOR,5.6U K
L841	645 008 0203	INDUCTOR,5.6U K
L871	645 008 0203	INDUCTOR,5.6U K
L881	645 011 0221	INDUCTOR,1.5U K

Ref. No.	Part No.	Deacription
DIODE		
D001	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D002	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D1007	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1011	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1015	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1016	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1019	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1020	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1021	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D1031	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D1032	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D135	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D1910	407 116 6504	LED SLP-181B-51
D222	407 005 4505	DIODE DS442X
	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
D251	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D252	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D253	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D254	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D271	407 053 6407	ZENER DIODE MTZ5.1C
	407 056 8200	ZENER DIODE RD5.1EB3
	407 163 8209	ZENER DIODE UZ-5.1BCC
D351	407 163 9909	ZENER DIODE UZ-9.1BCA
	407 162 2703	ZENER DIODE UZ-9.1BCB
D361	407 063 8309	ZENER DIODE MTZJ11C
	407 158 3400	ZENER DIODE UZ-11BSC
D445	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D446	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D447	407 199 8600	ZENER DIODE UZ-7.5BSC
	407 199 8709	ZENER DIODE UZ-8.2BSA
D491	407 124 6404	DIODE ERA18-04
	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
D495	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D501	407 005 7308	DIODE EM01Z
	408 009 9008	DIODE BYD33D
D603	407 006 6300	DIODE ERC05-10B
	407 009 6901	DIODE RM11C
D604	407 006 6300	DIODE ERC05-10B
	407 009 6901	DIODE RM11C
D605	407 006 6300	DIODE ERC05-10B
	407 009 6901	DIODE RM11C
D606	407 006 6300	DIODE ERC05-10B
	407 009 6901	DIODE RM11C
D614	407 005 4505	DIODE DS442X
	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
⚠D615A	407 173 2907	PHOTO COUPLE PC123F2
D616	407 005 4505	DIODE DS442X
	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
D617	407 007 6606	DIODE ES1
	407 007 6903	DIODE ES1Z
	408 009 9008	DIODE BYD33D
D618	407 005 4505	DIODE DS442X
	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
D619	407 057 8209	ZENER DIODE RD8.2EB1
D631	407 007 7702	DIODE EU2A
D633	407 007 7603	DIODE EU2
	407 007 7801	DIODE EU2Z
	408 007 2506	DIODE BYW32
D634	407 007 7603	DIODE EU2
	407 007 7801	DIODE EU2Z
	408 007 2506	DIODE BYW32
D635	407 007 7603	DIODE EU2
	407 007 7801	DIODE EU2Z
	408 007 2506	DIODE BYW32
D641	407 057 4003	ZENER DIODE RD6.8EB1
D643	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D644	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D645	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D646	407 053 8302	ZENER DIODE MTZ8.2A
	407 057 8209	ZENER DIODE RD8.2EB1
	407 151 9102	ZENER DIODE UZ-8.2BCA
D649	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D661	407 005 8602	DIODE ERA15-02
D669	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D683	408 007 8607	DIODE 1N4148
	407 013 1206	DIODE 1S1555
D685	407 057 4003	ZENER DIODE RD6.8EB1
D805	409 013 0104	IC HZT33
	409 026 8005	IC L5630
	409 057 5103	IC UPC574J
D861	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D862	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D871	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
D872	407 055 7907	ZENER DIODE RD3.6EL
MISCELLANEOUS		
⚠F601	423 022 2102	FUSE 250V 4A
F601-A1	645 000 5077	HOLDER,FUSE
F601-A2	645 000 5077	HOLDER,FUSE
A101	645 023 4125	TUNER,U
A101P1	645 008 4058	TERMINAL,PLUG
A101P2	645 008 4058	TERMINAL,PLUG
A1901	645 021 1041	UNIT,REMOCON RECEIVER
K1001	645 005 5867	SOCKET,RGB 21P
	610 234 3779	SOCKET 21P
K1001Z	610 261 2813	MOUNTING-BRKT F2WV
⚠PS601	408 003 6805	THERMISTOR 902P44E180MR14
	408 015 1904	THERMISTOR PA3A5180B270
SW1901	610 011 2698	SWITCH,PUSH
SW1902	610 011 2698	SWITCH,PUSH
SW1903	610 011 2698	SWITCH,PUSH
SW1904	610 011 2698	SWITCH,PUSH
SW501	610 011 2728	SWITCH,LEVER 1P-3T
⚠SW601	645 017 0928	SWITCH,PUSH POWER 2P-2T
X131	421 001 3300	SAW F TSF5305
X151	645 001 7902	TRAP,CERAMIC 6.0MHZ
	610 015 2885	TRAP,CERAMIC 6.0MHZ

Ref. No.	Part No.	Deacription
X161	645 003 2813	CERAMIC FILTER
X201	645 018 9050	OSC,CRYSTAL 4.433619MHZ
	610 249 5577	CRYSTAL OSCILLATOR
X871	645 015 8339	OSC,CRYSTAL 12MHZ
	645 018 9593	OSC,CRYSTAL 12MHZ

ASSY,PWB,CRT F2TCV 1AA0B10E3460B

TRANSISTOR

Q701	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q711	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q721	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q741	406 007 1901	TR JC556A
	406 007 1802	TR JC556B
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 028 7909	TR 2SA608-G-CTV-NP

CAPACITOR

C701	403 073 6403	CERAMIC	470P K	50V
C711	403 073 6403	CERAMIC	470P K	50V
C721	403 073 6403	CERAMIC	470P K	50V
C731	403 077 2807	CERAMIC	1000P Z	2K

RESISTOR

R701	401 018 2800	CARBON	330 JA	1/4W
R702	401 019 1901	CARBON	3.9K JA	1/4W
R703	401 012 5708	CARBON	1K JA	1/4W
R704	401 065 4604	OXIDE-MT	12K JA	2W
R705	401 009 6602	CARBON	3.3K JA	1/2W
R711	401 018 2800	CARBON	330 JA	1/4W
R712	401 019 1901	CARBON	3.9K JA	1/4W
R713	401 016 3809	CARBON	2.2K JA	1/4W
R714	401 065 4604	OXIDE-MT	12K JA	2W
R715	401 009 6602	CARBON	3.3K JA	1/2W
R721	401 018 2800	CARBON	330 JA	1/4W
R722	401 019 1901	CARBON	3.9K JA	1/4W
R723	401 015 2704	CARBON	1.8K JA	1/4W
R724	401 065 4604	OXIDE-MT	12K JA	2W
R725	401 009 6602	CARBON	3.3K JA	1/2W
R727	401 020 0801	CARBON	470 JA	1/4W
R741	401 020 2003	CARBON	4.7K JA	1/4W
R742	401 018 3807	CARBON	3.3K JA	1/4W
R744	401 018 2800	CARBON	330 JA	1/4W

VARIABLE RESISTOR

VR701	645 003 5722	VR,SEMI,4.7K N
VR702	645 003 5647	VR,SEMI,1K N
VR711	645 003 5722	VR,SEMI,4.7K N
VR712	645 003 5647	VR,SEMI,1K N
VR721	645 003 5722	VR,SEMI,4.7K N

Ref. No.	Part No.	Deacription
MISCELLANEOUS		
⚠K701	610 233 7990	CRT SOCKET

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NOTES:

1. RESISTORS SPECIFIED WITH RESISTANCE VALUE ARE "1/8Ω".
2. RESISTORS SPECIFIED WITH TYPE OF RESISTOR, TOLERANCE AND RESISTANCE VALUE ARE "1/4".
3. ~~THE PARTS MARKED WITH "~~" ARE NOT USED IN STANDARD OPERATION.
4. ~~VOLTAGE AND WAVEFORMS ARE NOT GUARANTEED.~~
5. VOLTAGE MEASURED WITH DIGITAL VOLTMETER.
6. VIEW OF IR & IC.
   TOP VIEW
   LETTER ARRANGEMENT
   IR: A B C D
   IC: A B C D E F G H
   15 CODE
   16 CODE
7. ISOLATION BORDER LINE.
   COLD SIDE
   HOT SIDE
8. LIST OF REPLACABLE DIODES.

V (71000075)	1SS176, 1SS133, GNA01
A (71000018)	1S1555, 1S2076, 1SZ423, DS442, 1N4148
AA (71000182)	1S1555, 1S2076, 1SZ423, DS442, 1N4148, 1SS176, 1SS133, GNA01
F (71000071)	1S1553, 1S2076A, 1SZ471, 1N4148

9. LIST OF REPLACEABLE TRANSISTORS.

	2SD535	2SC641A	2SC1815	DDC1740S
AD (77200183)	f, G	G, F	Y, GR	G, S, S
AE (78100035)	f, / , G	K, G, F	Y, Y, GR	G, S, S
	2SA608	2SA564A	2SA1015	2SA933S
AB (77200181)	F	R	Y	G, S
AC (77200182)	f, F	G, R	Y, Y	S

10. "J" : JUMPER WIRE.
    "X" : PART NOT USED.

Waveforms on ICs and Transistors

IC201-pin7 <CVBS out>	IC201-pin15 <CVBS in>	IC201-pin18 <B out>	IC201-pin19 <G out>	IC201-pin20 <R out>
IC201-pin28 <B-Y in>	IC201-pin29 <R-Y in>	IC201-pin37 <H out>	IC201-pin38 <H F/B>	IC201-pin41 <V F/B>
IC201-pin42 <V ramp>	IC201-pin43 <V out>	Q431-C <H drive>	Q432-C <H out>	Q461-E <Pcc>
IC501-pin4 <V in>	IC501-pin2 <V out>	Q611-C <Power amp>	Q612-C <Power drive>	Q613-C <power out>
IC801-pin36 <CPU H in>	IC801-pin37 <CPU V in>	Q2601-C <Video out B>	Q2611-C <Video out R>	Q2621-C <Video out G>
IC3811-pin8 <Sound out>				

Voltage on ICs

IC001													
1	1.6V	2	1.6V	3	15.5V	4	1.6V	5	1.6V	6	0V	7	-
10	14.0V	11	0V										
IC201													
1	3.1V	2	6.0V	3	6.0V	4	6.1V	5	0V	6	4.0V	7	3.1V
10	8.0V	11	0V	12	3.6V	13	4.4V	14	3.2V	15	3.9V	16	0V
19	2.5V	20	2.5V	21	0.2V	22	3.4V	23	3.4V	24	3.4V	25	2.9V
28	4.0V	29	4.0V	30	1.5V	31	1.5V	32	0V	33	4.9V	34	3.5V
37	0.9V	38	0.7V	39	3.0V	40	4.0V	41	2.5V	42	0V	43	0.9V
46	4.1V	47	7.0V	48	3.1V	49	1.6V	50	3.6V	51	4.3V	52	6.7V
IC271													
1	5.3V	2	0V	3	0V	4	0V	5	0.7V	6	0V	7	0V
10	0V	11	3.1V	12	3.1V	13	0V	14	1.3V	15	0V	16	1.3V
IC501													
1	0V	2	13.4V	3	25.3V	4	0.7V	5	0.7V	6	25.2V	7	2.1V
IC651							**IC652**						
1	14.5V	2	0V	3	11.9V			1	10.5V	2	0V	3	8.0V
IC801													
1	0.6V	2	2.4V	3	3.7V	4	1.8V	5	2.1V	6	0V	7	0V
10	0.5V	11	2.5V	12	0V	13	0V	14	3.7V	15	0V	16	0V
19	0V	20	0V	21	0V	22	0V	23	2.2V	24	0.2V	25	2.0V
28	0V	29	5.0V	30	5.0V	31	5.0V	32	0V	33	0V	34	0V
37	0.2V	38	4.9V	39	4.9V	40	0V	41	2.1V	42	2.4V	43	0V
46	5.4V	47	5.0V	48	0V	49	4.6V	50	4.6V	51	0V	52	2.9V
IC802													
1	0V	2	0V	3	0V	4	0V	5	4.8V	6	4.8V	7	0V
IC810													
1	0V	2	11.6V	3	2.0V	4	0V	5	0V	6	11.3V	7	2.2V
IC1201													
1	11.8V	2	7.8V	3	0V	4	7.1V	5	0V	6	0V	7	7.7V
IC1202													
1	3.0V	2	2.0V	3	6.0V	4	0V	5	0V	6	2.7V	7	0V
IC1261													
1	8.4V	2	8.4V	3	5.0V	4	8.4V	5	0V	6	0V	7	0V
10	11.9V	11	5.0V	12	8.4V	13	8.4V	14	8.4V	15	8.4V	16	11.9V
IC2401													
1	4.8V	2	3.4V	3	2.7V	4	2.5V	5	2.5V	6	2.5V	7	2.5V
10	2.5V	11	2.5V	12	2.5V	13	2.5V	14	2.5V	15	2.5V	16	0V
19	3.3V	20	4.6V										
IC3431													
1	5.8V	2	11.7V	3	5.8V	4	11.8V	5	0V	6	0V	7	5.8V
10	0V	11	4.6V	12	4.8V	13	5.8V	14	5.8V	15	5.8V	16	5.8V
19	0V	20	0V										
IC3451													
1	0V	2	0.3V	3	5.1V	4	0V	5	2.5V	6	0.4V	7	2.5V
10	0V	11	2.5V	12	0V	13	0V	14	0V	15	2.5V	16	2.5V
19	0V	20	2.5V	21	2.5V	22	2.5V	23	2.4V	24	0V	25	2.5V
28	2.3V	29	2.3V	30	2.3V	31	2.3V	32	0.3V	33	2.3V	34	2.3V
37	0V	38	4.8V	39	2.0V	40	3.4V	41	2.4V	42	0V	43	2.0V
46	4.8V	47	4.7V	48	2.0V	49	4.8V	50	0V	51	4.0V	52	0V
IC3801													
1	4.5V	2	4.6V	3	6.0V	4	0V	5	0V	6	0V	7	0V
10	0V	11	11.9V	12	5.8V	13	0V	14	0V	15	4.5V	16	4.5V
IC3811													
1	2.5V	2	0V	3	0V	4	0V	5	0V	6	0V	7	2.2V
10	2.2V	11	2.6V	12	4.3V	13	0V	14	5.1V	15	2.5V	16	0V

Voltage on Transistors

Q001		**Q121**		**Q151**		**Q152**		**Q153**		**Q164**		**Q171**		**Q201**		**Q202**	
E	0V	E	2.8V	E	5.8V	E	3.2V	E	9.2V	E	3.1V	E	2.5V	E	0V	E	0V
C	15.5V	C	8.0V	C	0V	C	8.7V	C	2.3V	C	0V	C	11.8V	C	0V	C	0.4V
B	0.1V	B	3.3V	B	3.2V	B	0V	B	8.7V	B	2.4V	B	3.1V	B	0.8V	B	0V
Q203		**Q431**		**Q432**		**Q461**		**Q552**		**Q501**		**Q611**		**Q612**		**Q613**	
E	0V	E	0V	E	0V	E	12.9V	E	0V	E	0V	E	10.8V	E	0V	E	0V
C	6.0V	C	10.6V	C	6V	C	12.9V	C	0V	C	4.7V	C	-1.4V	C	-1.4V	C	-1.1V
B	0V	B	0.3V	B	0V	B	13.5V	B	0.5V	B	0V	B	10.5V	B	-1.4V	B	-1.1V
Q641		**Q652**		**Q681**		**Q682**		**Q801**		**Q835**		**Q881**		**Q971**		**Q972**	
E	6.3V	E	5.2V	E	5.0V	E	5.0V	E	0V	E	0V	E	5.0V	E	0V	E	0V
C	29.5V	C	8.3V	C	7.8V	C	0.1V	C	2.0V	C	29.4V	C	6.3V	C	6.3V	C	0.2V
B	6.7V	B	5.8V	B	5.7V	B	5.6V	B	0.6V	B	0V	B	5.0V	B	0.1V	B	0.6V
Q973		**Q974**		**Q975**		**Q1001**		**Q1002**		**Q1003**		**Q1004**		**Q1005**		**Q1201**	
E	0V	E	4.9V	E	0V	E	0.6V	E	0.1V	E	0V	E	5.0V	E	5.0V	E	0V
C	0V	C	4.9V	C	4.7V	C	0V	C	11.8V	C	0.6V	C	11.9V	C	11.9V	C	0V
B	0.6V	B	5.6V	B	0V	B	0V	B	0.6V	B	0V	B	5.6V	B	5.6V	B	0.6V
Q1202		**Q1203**		**Q1204**		**Q1041**		**Q1042**		**Q1043**		**Q1251**		**Q1252**		**Q1601**	
E	0V	E	0V	E	0V	E	2.4V	E	10.6V	E	3.4V	E	7.7V	E	7.9V	E	1.8V
C	0V	C	0V	C	11.9V	C	9.4V	C	4.0V	C	11.9V	C	11.9V	C	11.9V	C	5.0V
B	0V	B	0V	B	0V	B	3.0V	B	9.4V	B	4.0V	B	8.4V	B	8.4V	B	5.2V
Q1902		**Q2001**		**Q2601**		**Q2611**		**Q2621**		**Q2640**		**Q2651**		**Q3531**		**Q3432**	
E	0V	E	0V	E	1.8V	E	1.8V	E	1.9V	E	1.5V	E	11.8V	E	5.2V	E	5.2V
C	5.0V	C	13.2V	C	134.3V	C	137.1V	C	143.8V	C	0V	C	0V	C	11.9V	C	11.9V
B	0.0V	B	0V	B	2.3V	B	2.2V	B	2.2V	B	0.9V	B	11.9V	B	5.9V	B	5.9V
Q3481		**Q3482**		**Q3483**		**Q3484**		**Q3501**		**Q3802**							
E	1.9V	E	7.7V	E	1.9V	E	7.7V	E	0.7V	E	5.2V						
C	8.4V	C	11.9V	C	8.4V	C	11.9V	C	6.1V	C	11.9V						
B	2.5V	B	8.4V	B	2.5V	B	8.4V	B	1.4V	B	5.9V						

MAIN : 1AA0B10E3460A
CRT : 1AA0B10E3460B

COLOUR TELEVISION

SANYO

CHASSIS SERIES EC5

MODEL NUMBER 21MT2 (C21ES35B)

SERVICE REF.NO. C21ES35B-01

The service Precaution:
The area enclosed by this line ( ) is directly connected with AC mains voltage. When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

Product safety notice:
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark ⚠ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

Circuit diagram notes :
1. All resistance values are in ohms, K=1,000, M=1,000,000.
2. All resistance rated wattages are 1/6W unless otherwise noted.
3. Excepting electrolytic capacitors, all capacitance values of less than 1 are expressed in μF and more than 1 are pF.
4. All capacitance rated voltages are 50V unless otherwise noted.
5. All inductance values are in μH.
6. Voltage readings taken a digital voltmeter are from point indicated chassis ground. Voltage readings taken by using a colour bar signal are with all controls at normal position. Some voltages may vary with signal strength.
7. Waveforms were taken with colour bar and controls adjusted for normal picture. Waveforms were taken by using a wide band oscilloscope and a low capacity probe.
8. This circuit diagram covers a basic or representative chassis only. There may be some components or partial circuit differences between the actual chassis and the circuit diagram.
9. ■ Diode 1S1555 may be replaced with 1S2473, 1S2076 or DS472 unless otherwise noted.
   ■Transistor 2SC536(Q,R,S), 2SC1740(Q,R,S), 2SC945A(Q,R,P) or 2SC1815(G,O,Y) unless otherwise noted.
   ■ Transistor 2SA608(E,F) may be replaced with 2SA933(Q,R), 2SA564(QA,RA), or 2SA1015(O,Y) unless otherwise noted.

Expression of capacitance and resistance in circuit diagram.

Capacitance (Example)
1000 C M 2000 D
- Characteristic
- Capacitance value (220pF)
- Tolerance (±20%) → J= ± 5%, K= ± 10%, M= ± 20%
- Kind(Ceramic) → F, A, U, D : Electrolytic; C, K, B : Ceramic; F : Mylar film; M, N : Polypropylene; Z : Metallized paper
- Rated voltage (1,000V)

Resistance (Example)
1/2 N J 1.2
- Resistance value (1.2Ω)
- Tolerance (±5%)
- Kind (M.carbon) → D : Carbon; N : Metallized carbon; S : Oxide metallized; W : Wire wounding; C : Solid
- Rated wattage(1/2W)

Terminal guide

C : Collector
B : Base
E : Emitter

A : Anode
K : Kathode

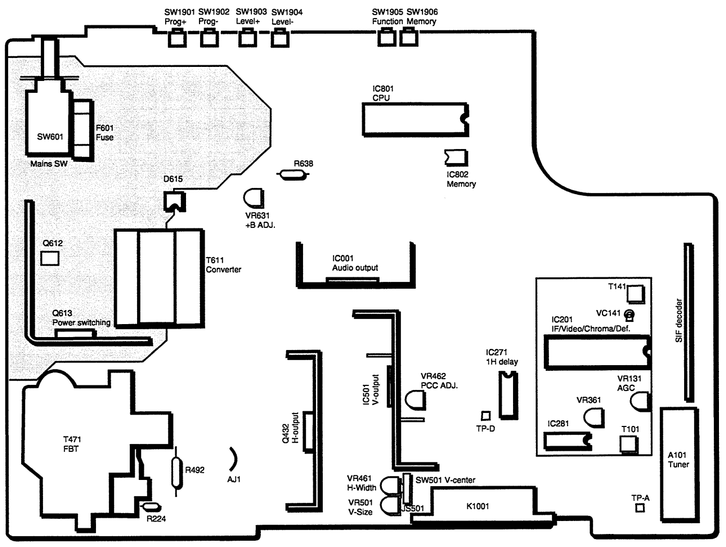
Chip Components

Transistor
Diode
Resistor 12 x 10³= 12k

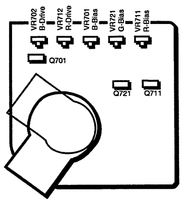
Part No. SKP20120 F2TCV (SHEET 1/2)

Part No. SKP20120 F2TCV (SHEET 2/2)

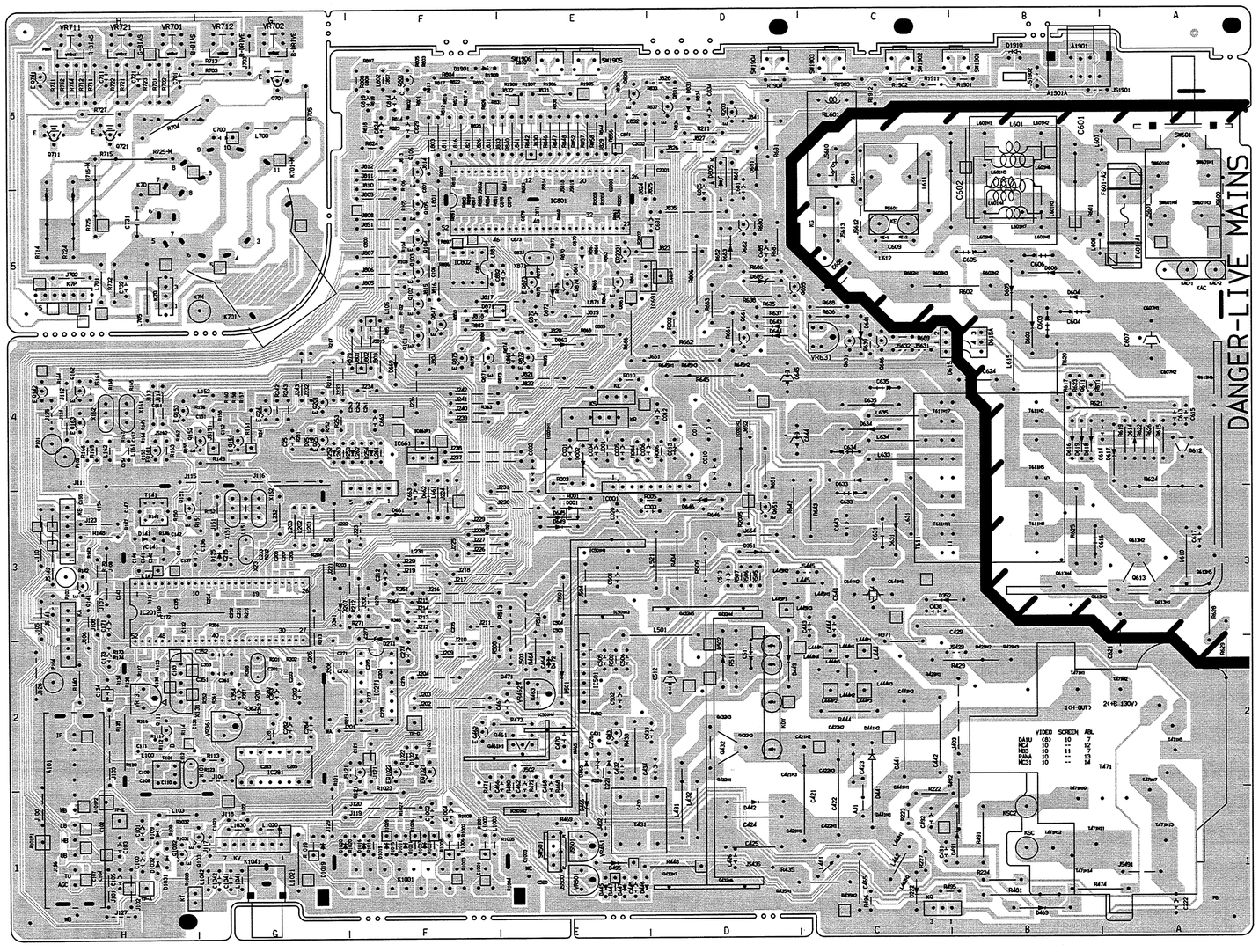
Main Board
Component Location



CRT Board
Component Location



Main/CRT Board
Circuit side



GENERAL BLOCK DIAGRAMS FOR EC5 CHASSIS